

Dr Marnerides Cross Examination

Q. [Baby D], please. I am looking at the report that you produced in May 2019, which is the report we've been through in your evidence, Dr Marnerides.

A. Which report, I'm sorry?

Q. Sorry, the 22nd. 22 January 2019. I'm going to your opinion at the back of the report.
First of all, considering [Baby D]'s case on the basis of autopsy findings and morphological evidence and histopathology, there was nothing that you could identify that established cause of death was by an air embolism; that's correct, isn't it?

A. Yes.

Q. On the subject of -- you mentioned air in the aorta and also small amount of air at the tip of the catheter that was seen.

A. That's the information from the radiology.

Q. That's what you received. And we've had evidence on air in the aorta from the radiologist. Just with the catheter, can you confirm for us, we're talking about the UVC actually, aren't we, the umbilical venous catheter? That can be confirmed if necessary, but it's in the report of Laurence Abernathy, who's the paediatrician who dealt with that, the paediatric radiologist. The air is just at the tip of the UVC, Dr Marnerides.

A. Yes.

Q. As it happens, I can go to the notes if we need to, but let me deal with it this way, that UVC was used during resuscitation for adrenaline and other medications to pass through it. So however that comes to be there after all of that has taken place, it's pretty unlikely in fact -- I'm not saying you're suggesting this -- but it's pretty unlikely that that is something which was put in in the first place to trigger a collapse; do you agree?

A. Let me get to understand what you're suggesting. You're suggesting that the air was put -- that the report is that the tip was generated --

Q. No, you have made an observation and referred to air being seen at the tip of the UVC catheter.

A. Yes.

Q. And in fact that could just be a post-mortem change or something associated with the resuscitation process, couldn't it?

A. It could, yes.

Q. And in support of that I was simply identifying -- can we put up T256, please. This is the point I'm making, just so we can settle this, Dr Marnerides. If we go behind that, please, actually to the exhibit.

Just scroll down. This is the period of treatment after [Baby D]'s collapse. We can see, if we keep scrolling down, please, notes by Dr Brunton. Can you see at 04.00, Dr Marnerides, we've got the first dose of adrenaline given via the UVC -- this is after the collapse has happened -- and then a second dose and then a third dose at 04.05, sodium chloride at 04.04. Do you see that?

A. I see it.

Q. So as it happens, even after the time of the collapse, the UVC had medication passing through it.

A. Yes. But that -- to be fair, we need to consider the other possibilities. So could it be air introduced during the resuscitation, knowing that there has been infusion of fluids and adrenaline through that catheter? Yes, this could be the case. That's why we could see the tip there, the air at the tip. That could be. Could it be that air was there and it simply was pushed back and forth when fluid was passing through? That's another possibility. To say what of the two is the more likely, I don't think I can.

Q. Right. In any event, your view on the pathology is that there's nothing to identify that this is anything in support of air embolus?

A. You mean the tip?

Q. Overall, the pathology and what you find.

A. So there is no -- from the histology there is no findings of air bubbles if that --

Q. Yes. And indeed, from the pathology, as you said yesterday, you don't see findings of air embolism; is that correct?

A. That positively support air embolism, yes.

Q. All right. In [Baby D]'s case, we know from the agreed facts that were read to us coming from the pathologist who conducted the post-mortem, Dr McPartland, that there was -- what was described as agreed fact 22, ladies and gentlemen -- that there was:

"Patchy acute pneumonia, most prominent within one of the right lung samples, with some hyaline membranes present, indicating diffuse alveolar damage."

Do you recall that from yesterday, Dr Marnerides? She also formed the view that it was likely pneumonia was present at birth. Do you accept those findings?

A. Yes.

Q. The hyaline membranes with alveolar damage associated is indicative of the effect of acute pneumonia, isn't it, or aren't they?

A. It's not a black-and-white interpretation of that. Let me just...

(Pause)

So she was 37-plus weeks when she was born, so I was just thinking whether it could be acute lung injury of prematurity, the hyaline membranes. It's highly unlikely given her gestational age at birth. There are two alternatives -- well, three alternative reasons for a baby of this age to show those hyaline membranes. One is surfactant deficiency. This is not the case here from the clinical review. That's my understanding.

The other one is the direct effects of ventilation, mechanical ventilation, so you can get hyaline membranes even in the absence of inflammation when you ventilate a baby. And the third alternative is the inflammation, so the pneumonia.

In this case, whether it is the pneumonia on its own or it is the combined effect with ventilation, I can't really say. But it's the evidence that there has been acute injury to the brain -- to the lung there, sorry.

Q. Do you accept that pneumonia could be a contributing factor to death in this case?

A. You mean in part 2 of the formulation of the cause of death?

Q. Yes. Did it play a part in this?

A. If there is clinical support that the baby was unwell clinically because of the pneumonia, I think, yes, it could be a potential contributor.

Q. Now, I'm going to follow up on that. I'm not going to leave that there, Dr Marnerides, we'll follow through with that. You explained to us yesterday, when dealing with this in particular, that you relied on the clinicians and the radiology in forming your final conclusions about cause of death in this case.

A. The immediate cause of death, yes.

Q. In particular, and with regard to the question of pneumonia, you considered the course of events as described by the clinicians?

A. Yes.

Q. And that includes the opinion of Dr Evans; is that correct?

A. Correct.

Q. You've also had the benefit of opinions by Sandie Bohin; is that correct too?

A. Correct.

Q. And the position you take from the clinical review is also someone called Ward Platt who's featured in it as well. The position you take from the clinical view, relying upon that is that [Baby D] was in effect stable at the time or shortly before the collapse; is that correct?

A. That's my understanding, yes.

Q. And indeed, a description or an expression used by Dr Evans and referred to in your report is that there had been:

"A window of near complete recovery prior to the collapse."

That's talking about her condition at birth through to the period of collapse some time later.

So against that background, against that clinical assessment, you then go on to consider the possibility of whether this was an air embolus, which is the suggestion that's been raised? Is that correct?

A. I considered the proposed mechanism, yes.

Q. So your conclusion is based on the co-assessment of the clinical review and the radiology in particular; is that correct?

A. And the pathology.

Q. And the pathology. Insofar as the pathology doesn't identify any, for instance, natural mechanism that could otherwise explain this --

A. Alternative.

Q. Alternative, yes. Although the question of pneumonia is settled to a large degree to you because of the clinical descriptions of the recovery and stability prior to collapse?

A. Yes, because the experience is that babies at 37 weeks of gestation who are born with congenital pneumonia, unless they develop sepsis, which was not the case here, or other complications, they will recover. That's the -- so if the clinical indication is that the baby was recovering and stable, and this is my understanding from what I was being -- then this would be a baby dying with the pneumonia rather than from the pneumonia.

Q. All right. That's what I wanted to establish. Thank you for dealing with that.